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**From:** Adams, Glenn [Adams.Glenn@epa.gov]  
**Sent:** 6/11/2018 11:15:17 AM  
**To:** Strynar, Mark [Strynar.Mark@epa.gov]; Maddaloni, Mark [Maddaloni.Mark@epa.gov]; Olsen, Marian [Olsen.Marian@epa.gov]; Metz, Chloe [Metz.Chloe@epa.gov]  
**CC:** Koporec, Kevin [Koporec.Kevin@epa.gov]; Lindstrom, Andrew [Lindstrom.Andrew@epa.gov]  
**Subject:** RE: Question about risk from vegetables

Thank you for the information. I will pass it on to the State.

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**From:** Strynar, Mark  
**Sent:** Monday, June 11, 2018 7:06 AM  
**To:** Maddaloni, Mark <Maddaloni.Mark@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Metz, Chloe <Metz.Chloe@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>  
**Cc:** Koporec, Kevin <Koporec.Kevin@epa.gov>; Lindstrom, Andrew <Lindstrom.Andrew@epa.gov>  
**Subject:** RE: Question about risk from vegetables

Mark,

Chris Higgins at the Colorado School of Mines has done some work on PFAS uptake into plants from contaminated soil. Look up references from him. In brief what they find is the lower molecular weight PFAS move more readily into plant material than the longer homologues. In addition I seem to recall the PFAS with sulfonates move less readily than the corresponding PFAS that has a carboxylic acid. However I am not yet aware of any GenX movement into plants work yet. I do know in the Chemours area near Fayetteville, NC some plant material has been sampled. I have not yet seen results.

Mark

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**From:** Maddaloni, Mark  
**Sent:** Thursday, June 07, 2018 11:41 AM  
**To:** Olsen, Marian <Olsen.Marian@epa.gov>; Metz, Chloe <Metz.Chloe@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>  
**Cc:** Koporec, Kevin <Koporec.Kevin@epa.gov>; Lindstrom, Andrew <Lindstrom.Andrew@epa.gov>; Strynar, Mark <Strynar.Mark@epa.gov>  
**Subject:** RE: Question about risk from vegetables

Now that Marian mentioned the Chemours sampling in Fayetteville, it did ring a bell that some produce sampling for GenX has been done. I copied Andy L and Mark S – They may know something more about this.

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**From:** Olsen, Marian  
**Sent:** Thursday, June 07, 2018 11:29 AM  
**To:** Maddaloni, Mark <Maddaloni.Mark@epa.gov>; Metz, Chloe <Metz.Chloe@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>  
**Cc:** Koporec, Kevin <Koporec.Kevin@epa.gov>  
**Subject:** Re: Question about risk from vegetables

Hi,

I ran a pub med search and did not find any scientific papers on PFOA, PFOS and Gen-X in plants. The only reference was a newspaper article in the Fayetteville paper indicating the Company conducted sampling near their plant and had detections. A reference to a paper was not provided in the newspaper article.

Marian

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**From:** Maddaloni, Mark  
**Sent:** Thursday, June 7, 2018 11:20 AM  
**To:** Metz, Chloe; Adams, Glenn  
**Cc:** Koporec, Kevin; Olsen, Marian  
**Subject:** RE: Question about risk from vegetables

Here's a recently published paper on uptake of Pb and As in garden vegetables.

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**From:** Metz, Chloe  
**Sent:** Thursday, June 07, 2018 10:22 AM  
**To:** Adams, Glenn <[Adams.Glenn@epa.gov](mailto:Adams.Glenn@epa.gov)>  
**Cc:** Maddaloni, Mark <[Maddaloni.Mark@epa.gov](mailto:Maddaloni.Mark@epa.gov)>; Koporec, Kevin <[Koporec.Kevin@epa.gov](mailto:Koporec.Kevin@epa.gov)>; Olsen, Marian <[Olsen.Marian@epa.gov](mailto:Olsen.Marian@epa.gov)>  
**Subject:** RE: Question about risk from vegetables

Both the sites I mentioned don't exactly fit the garden scenario – Ringwood was lead in foraged plants and BROS was a slew of chemicals in peaches from the adjacent orchard. In the case of BROS (link to HHRA: <https://semspub.epa.gov/work/02/111544.pdf>) there were very few of the COCs (metal, PAHs, PCBs) detected in the fruit, so only a qualitative risk assessment was performed. I'm copying Marian in case she is aware of any other examples. Sorry!

Chloe Metz  
Chief, Superfund Technical Support Section  
EPA, Region 2  
212-637-3955

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**From:** Adams, Glenn  
**Sent:** Thursday, June 07, 2018 10:04 AM  
**To:** Metz, Chloe <[Metz.Chloe@epa.gov](mailto:Metz.Chloe@epa.gov)>  
**Cc:** Maddaloni, Mark <[Maddaloni.Mark@epa.gov](mailto:Maddaloni.Mark@epa.gov)>; Koporec, Kevin <[Koporec.Kevin@epa.gov](mailto:Koporec.Kevin@epa.gov)>  
**Subject:** RE: Question about risk from vegetables

Thanks Chloe, do ya have an example of a garden exposure assessment with a detected metal other than lead? If so, could you send it to me. We have done them for a few sites with metals and PAHs but everything is ND except low levels with lead.

Thanks,  
Glenn

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**From:** Metz, Chloe  
**Sent:** Thursday, June 7, 2018 9:25 AM  
**To:** Maddaloni, Mark <[Maddaloni.Mark@epa.gov](mailto:Maddaloni.Mark@epa.gov)>  
**Cc:** Adams, Glenn <[Adams.Glenn@epa.gov](mailto:Adams.Glenn@epa.gov)>  
**Subject:** RE: Question about risk from vegetables

Mark, the state has not sampled vegetables at Hoosick. We do have a few sites where we have samples plants (Ringwood, BROS), but those have been mostly for metals. Sorry that's not more helpful, Glenn!

Chloe Metz  
Chief, Superfund Technical Support Section  
EPA, Region 2  
212-637-3955

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**From:** Maddaloni, Mark  
**Sent:** Wednesday, June 06, 2018 3:43 PM  
**To:** Metz, Chloe <[Metz.Chloe@epa.gov](mailto:Metz.Chloe@epa.gov)>  
**Cc:** Adams, Glenn <[Adams.Glenn@epa.gov](mailto:Adams.Glenn@epa.gov)>  
**Subject:** FW: Question about risk from vegetables

Hi Chloe,

Was there any vegetable sampling for GenX in Hoosick Falls? Or any other input on Glenn's query? Thanks!

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**From:** Adams, Glenn  
**Sent:** Wednesday, June 06, 2018 3:17 PM  
**To:** Maddaloni, Mark <[Maddaloni.Mark@epa.gov](mailto:Maddaloni.Mark@epa.gov)>; Hubbard, Jennifer <[Hubbard.Jennifer@epa.gov](mailto:Hubbard.Jennifer@epa.gov)>; Beringer, Mike <[Beringer.Michael@epa.gov](mailto:Beringer.Michael@epa.gov)>; Partridge, Charles <[Partridge.Charles@epa.gov](mailto:Partridge.Charles@epa.gov)>; Stralka, Daniel <[Stralka.Daniel@epa.gov](mailto:Stralka.Daniel@epa.gov)>  
**Cc:** Koporec, Kevin <[Koporec.Kevin@epa.gov](mailto:Koporec.Kevin@epa.gov)>  
**Subject:** Question about risk from vegetables

The State of NC is looking at the vegetable pathway from GenX contamination. They are trying to get sample analyzed and if they accomplish that would then be doing exposure calculations for ingestion of vegetables. Have ya done anything like this in your Region recently? If not for PFAS, what about some other organic. Our work has mostly been done with Lead which uses the IEUBK so does not give them a good example. So if you have an example we can share with them, I'd appreciate it.

Thanks in advance,  
Glenn

Glenn Adams, Chief  
Scientific Support Section  
Reg 4 Superfund Division  
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